

What is claimed is:

1. A read-only or rewritable or recordable optical disc comprising:

a recording membrane on which data is recorded,
said data being recorded and/or reproduced by an irradiation of a laser spot on said recording membrane,
wherein a BCA code recorded on said recording membrane is constituted by a plurality of marks, and includes a secret code which is modulated in accordance with a previously determined procedure in a range capable of recognizing a position in a radial direction of the optical disc and/or a position in a track direction of said plurality of marks as the BCA code.

2. An illegal copy finding system finding an illegal copy of an optical disc on which data and a BCA code are recorded, comprising:

a recording apparatus recording on the optical disc the BCA code constituted by a plurality of marks and including a secret code which is modulated in accordance with a previously determined procedure in a range capable of recognizing a position in a radial direction of the optical disc and/or a position in a track direction of said plurality of marks as the BCA code;

a BCA history database storing a history including a correspondence between the BCA code of the optical disc

recording said BCA code and the secret code; and

a management center reading the BCA code and the secret code recorded on the optical disc so as to compare both on the basis of an input of the correspondence between the BCA code and the secret code stored in said BCA history database.

3. An illegal copy finding method of finding an illegal copy of an optical disc on which data and a BCA code are recorded, comprising:

a recording step of recording on the optical disc the BCA code constituted by a plurality of marks and including a secret code which is modulated in accordance with a previously determined procedure in a range capable of recognizing a position in a radial direction of the optical disc and/or a position in a track direction of said plurality of marks as the BCA code;

a storing step of storing a history including a correspondence between the BCA code of the optical disc recording said BCA code and the secret code in a BCA history database; and

a comparing step of reading the BCA code and the secret code recorded on the optical disc so as to compare both on the basis of an input of the correspondence between the BCA code and the secret code stored in said BCA history database.

4. An optical disc manufacturing apparatus manufacturing an optical disc, comprising:

a recording means for recording the BCA code constituted by a plurality of marks and including a secret code which is modulated in accordance with a previously determined procedure in a range capable of recognizing a position in a radial direction of the optical disc and/or a position in a track direction of said plurality of marks as the BCA code, on the optical disc.

5. An optical disc manufacturing method of manufacturing an optical disc, comprising:

a recording step of recording the BCA code constituted by a plurality of marks and including a secret code which is modulated in accordance with a previously determined procedure in a range capable of recognizing a position in a radial direction of an optical disc and/or a position in a track direction of said plurality of marks as the BCA code, on the optical disc.

6. An illegal copy finding system as claimed in claim 2, wherein said recording apparatus comprises:

an optical head irradiating a laser spot light on the optical disc;

a BCA code memory for forming the BCA code constituted by a plurality of marks in the track direction by said laser spot light;

a secret code memory storing a secret code modulated in accordance with a previously determined procedure in a

range capable of recognizing positions in the radial direction of the optical disc and/or positions in the track direction of a plurality of marks forming the BCA code as the BCA code, with respect to the BCA code stored in said BCA code memory; and

a microprocessor controlling the BCA code and the secret code with respect to said optical head output control portion, and

wherein said microprocessor constitutes an optical disc manufacturing apparatus or a BCA code recording apparatus which records the BCA code including the secret code on the optical disc surface by modulating the BCA code by using the secret code stored in said secret code memory while moving an optical head in the radial direction of the optical disc.

7. An optical disc manufacturing apparatus as claimed in claim 4, wherein said recording means comprises:

an optical head irradiating a laser spot light on the optical disc;

a BCA code memory for forming the BCA code constituted by a plurality of marks in the track direction by said laser spot light;

a secret code memory storing a secret code modulated in accordance with a previously determined procedure in a range capable of recognizing positions in the radial

direction of the optical disc and/or positions in the track direction of a plurality of marks forming the BCA code as the BCA code, with respect to the BCA code stored in said BCA code memory; and

a microprocessor controlling the BCA code and the secret code with respect to said optical head output control portion, and

wherein said microprocessor constitutes an optical disc manufacturing apparatus or a BCA code recording apparatus which records the BCA code including the secret code on the optical disc surface by modulating the BCA code by using the secret code stored in said secret code memory while moving an optical head in the radial direction of the optical disc.

8. An optical disc manufacturing method as claimed in claim 5, wherein said recording step uses an optical head irradiating a laser spot light on the optical disc, a BCA code memory for forming the BCA code constituted by a plurality of marks in the track direction by said laser spot light, and a secret code memory storing a secret code modulated in accordance with a previously determined procedure in a range capable of recognizing positions in the radial direction of the optical disc and/or positions in the track direction of a plurality of marks forming the BCA code as the BCA code, with respect to the BCA code stored

in said BCA code memory, and
wherein said optical head records the BCA code including the secret code on the optical disc surface by modulating the BCA code by using the secret code stored in said secret code memory by irradiating a laser spot light on the optical disc while moving in the radial direction of the optical disc.

9. A read-only or rewritable or recordable optical disc comprising:

a recording membrane on which data is recorded,
said data being recorded and/or reproduced by irradiation of a laser spot on said recording membrane,

wherein a BCA code recorded on said recording membrane is constituted by a plurality of marks, and includes a secret code which is modulated in accordance with a previously determined procedure in a range capable of recognizing a length in a radial direction of the optical disc and a width in a track direction of said plurality of marks as the BCA code.

10. An illegal copy finding system finding an illegal copy of an optical disc on which data and a BCA code are recorded, comprising:

a recording apparatus recording on the optical disc the BCA code constituted by a plurality of marks and including a secret code which is modulated in accordance with a

previously determined procedure in a range capable of recognizing a length in a radial direction of the optical disc and/or a width in a track direction of said plurality of marks as the BCA code;

a BCA history database storing a history including a correspondence between the BCA code of the optical disc recording said BCA code and the secret code; and

a management center reading the BCA code and the secret code recorded on the optical disc so as to compare both on the basis of an input of the correspondence between the BCA code and the secret code stored in said BCA history database.

11. An illegal copy finding method of finding an illegal copy of an optical disc on which data and a BCA code are recorded, comprising:

a recording step of recording on the optical disc the BCA code constituted by a plurality of marks and including a secret code which is modulated in accordance with a previously determined procedure in a range capable of recognizing a length in a radial direction of the optical disc and/or a width in a track direction of said plurality of marks as the BCA code;

a storing step of storing a history including a correspondence between the BCA code of the optical disc recording said BCA code and the secret code in a BCA history database; and

a comparing step of reading the BCA code and the secret code recorded on the optical disc so as to compare on the basis of an input of the correspondence between the BCA code and the secret code stored in said BCA history database.

12. An optical disc manufacturing apparatus manufacturing an optical disc, comprising:

a recording means for recording the BCA code constituted by a plurality of marks and including a secret code which is modulated in accordance with a previously determined procedure in a range capable of recognizing a length in a radial direction of the optical disc and/or a width in a track direction of said plurality of marks as the BCA code, on the optical disc.

13. An optical disc manufacturing method of manufacturing an optical disc, comprising:

a recording step of recording the BCA code constituted by a plurality of marks and including a secret code which is modulated in accordance with a previously determined procedure in a range capable of recognizing a length in a radial direction of an optical disc and/or a width in a track direction of said plurality of marks as the BCA code, on the optical disc.

14. An illegal copy finding system as claimed in claim 10, wherein said recording apparatus comprises:

an optical head irradiating a laser spot light on the

optical disc;

a BCA code memory for forming the BCA code constituted by a plurality of marks in the track direction by said laser spot light;

a secret code memory storing a secret code modulated in accordance with a previously determined procedure in a range capable of recognizing the lengths in the radial direction of the optical disc and/or the widths in the track direction of a plurality of marks forming the BCA code as the BCA code, with respect to the BCA code stored in said BCA code memory; and

a microprocessor controlling the BCA code and the secret code with respect to said optical head output control portion, and

wherein said microprocessor constitutes an optical disc manufacturing apparatus or a BCA code recording apparatus which records the BCA code including the secret code on the optical disc surface by modulating the BCA code by using the secret code stored in said secret code memory while moving an optical head in the radial direction of the optical disc.

15. An optical disc manufacturing apparatus as claimed in claim 12, wherein said recording means comprises:

an optical head irradiating a laser spot light on the optical disc;

a BCA code memory for forming the BCA code constituted by a plurality of marks in the track direction by said laser spot light;

a secret code memory storing a secret code modulated in accordance with a previously determined procedure in a range capable of recognizing the lengths in the radial direction of the optical disc and/or the widths in the track direction of a plurality of marks forming the BCA code as the BCA code, with respect to the BCA code stored in said BCA code memory; and

a microprocessor controlling the BCA code and the secret code with respect to said optical head output control portion, and

wherein said microprocessor constitutes an optical disc manufacturing apparatus or a BCA code recording apparatus which records the BCA code including the secret code on the optical disc surface by modulating the BCA code by using the secret code stored in said secret code memory while moving an optical head in the radial direction of the optical disc.

16. An optical disc manufacturing method as claimed in claim 13, wherein said recording step uses an optical head irradiating a laser spot light on the optical disc, a BCA code memory for forming the BCA code constituted by a plurality of marks in the track direction by said laser spot

light, and a secret code memory storing a secret code modulated in accordance with a previously determined procedure in a range capable of recognizing the lengths in the radial direction of the optical disc and/or the widths in the track direction of a plurality of marks forming the BCA code as the BCA code, with respect to the BCA code stored in said BCA code memory, and

wherein said optical head records the BCA code including the secret code on the optical disc surface by modulating the BCA code by using the secret code stored in said secret code memory by irradiating a laser spot light on the optical disc while moving in the radial direction of the optical disc.

17. An optical disc as claimed in claim 1 or 9, wherein said recording membrane is constituted by a phase change recording membrane or a pigment system recording membrane in which a reflection factor is changed by an irradiation of a laser spot.

18. An illegal copy finding method as claimed in claim 3 or 11, wherein said recording step includes a step of recording the BCA code including the secret code on the optical disc surface by modulating the BCA code by using the secret code stored in said secret code memory while moving the optical head in the radial direction of the optical disc.

19. An optical disc as claimed in claim 1 or 9, wherein

the mark of said BCA code is constituted by a plurality of bars extending in the radial direction of the optical disc, a width of said bar, a position of said bar in the radial direction of the optical disc, a distance between an innermost peripheral end side and an outermost peripheral end side on the basis of a rotation center of the optical disc, a distance between centers of said bar in the disc track direction, and a distance between bar starting ends are standardized, and the secret code is included in the BCA code by changing said bar recording position within said plurality of standards.

20. An optical disc as claimed in claim 17, wherein the marks of said BCA code are constituted by a plurality of bars extending in the radial direction of the optical disc, a width of said bar, a position of said bar in the radial direction of the optical disc, a distance between an innermost peripheral end side and an outermost peripheral end side on the basis of a rotation center of the optical disc, a distance between centers of said bars in the disc track direction, and a distance between bar starting ends are standardized, and the secret code is included in the BCA code by changing said bar recording position within said plurality of standards.

21. An illegal copy finding system as claimed in claim 2, 6, 10 or 14, wherein the marks of said BCA code are constituted

by a plurality of bars extending in the radial direction of the optical disc, a width of said bar, a position of said bar in the radial direction of the optical disc, a distance between an innermost peripheral end side and an outermost peripheral end side on the basis of a rotation center of the optical disc, a distance between centers of said bar in the disc track direction, and a distance between bar starting ends are standardized, and the secret code is included in the BCA code by changing said bar recording position within said plurality of standards.

22. An illegal copy finding method as claimed in claim 3 or 11, wherein the marks of said BCA code are constituted by a plurality of bars extending in the radial direction of the optical disc, a width of said bar, a position of said bar in the radial direction of the optical disc, a distance between an innermost peripheral end side and an outermost peripheral end side on the basis of a rotation center of the optical disc, a distance between centers of said bar in the disc track direction, and a distance between bar starting ends are standardized, and the secret code is included in the BCA code by changing said bar recording position within said plurality of standards.

23. An illegal copy finding method as claimed in claim 18, wherein the marks of said BCA code are constituted by a plurality of bars extending in the radial direction of the

optical disc, a width of said bar, a position of said bar in the radial direction of the optical disc, a distance between an innermost peripheral end side and an outermost peripheral end side on the basis of a rotation center of the optical disc, a distance between centers of said bar in the disc track direction, and a distance between bar starting ends are standardized, and the secret code is included in the BCA code by changing said bar recording position within said plurality of standards.

24. An optical disc manufacturing apparatus as claimed in claim 4, 7, 12 or 15, wherein the marks of said BCA code are constituted by a plurality of bars extending in the radial direction of the optical disc, a width of said bar, a position of said bar in the radial direction of the optical disc, a distance between an innermost peripheral end side and an outermost peripheral end side on the basis of a rotation center of the optical disc, a distance between centers of said bars in the disc track direction, and a distance between bar starting ends are standardized, and the secret code is included in the BCA code by changing said bar recording position within said plurality of standards.

25. An optical disc manufacturing method as claimed in claim 5, 8, 10 or 13, wherein the marks of said BCA code are constituted by a plurality of bars extending in the radial direction of the optical disc, a width of said bar, a position

of said bar in the radial direction of the optical disc, a distance between an innermost peripheral end side and an outermost peripheral end side on the basis of a rotation center of the optical disc, a distance between centers of said bars in the disc track direction, and a distance between bar starting ends are standardized, and the secret code is included in the BCA code by changing said bar recording position within said plurality of standards.